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10/678,347	10/03/2003	Guanghong Yang	20023-7004	1812

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EXAMINER

ANWARI, MACEEH

ART UNIT	PAPER NUMBER
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2144

MAIL DATE	DELIVERY MODE
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08/03/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/678,347

Applicant(s)

YANG, GUANGHONG

Examiner

Maceeh Anwari

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/03/2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This is the initial Office action based on the 10/678,347 application filed on 10/03/2003. Claims 1-42, as originally filled, are currently pending and have been considered below.

Drawings

2. The drawings are objected to because the applicant fails to label figure 1 as prior art. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 16, and 18-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The applicant does not successfully disclose what is meant by the phrase "connect () call", hence failing to distinctly point out the invention. The examiner will simply interpret this to be a programmed function connecting the user/client to the server.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-21 are rejected under 35 U.S.C. 101 because the claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material *per se*.

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Descriptive material can be characterized as either “functional descriptive material” or “non-functional descriptive material.” Both types of “descriptive material” are non-statutory when claimed as descriptive material *per se*, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994)

Merely claiming non-functional descriptive material, i.e., abstract ideas, stored on a computer-readable medium, in a computer, or on an electromagnetic carrier signal, does not make it statutory. See *Diehr*, 450 U.S. at 185-86, 209 USPQ at 8 (noting that the claims for an algorithm in *Benson* were unpatentable as abstract ideas because “[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer.”).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Subramaniam et al (hereinafter Subramaniam), U.S. Patent No.: 6,081,900.

Subramaniam teaches claims:

1. A tunneling system, comprising: a service publishing/tunneling server coupled to a wide-area network (Figure 1-4 and Abstract & Col. 1 lines 4-9; reads on this limitation); and a service proxy, coupled to one or more computer systems, for implementing one or more service proxy functions (Figure 1 and Col. 5 lines 38-57; reads on this limitation); wherein a TCP service for said one or more client computer systems is available from said server through said service proxy (Figures 1-4 and Col. 3 lines 19-25; reads on this limitation).
2. The tunneling system of claim 1 wherein said one or more computer systems are separated from said server by one or more firewalls (Figure 1 and Col. 4 lines 53-64; reads on this limitation).
3. The tunneling system of claim 1 wherein said one or more computer systems are included in different enterprise networks (Figure 1 and Col. 4 lines 42-64; reads on this limitation).
4. The tunneling system of claim 3 further comprising one or more clients and one or more server applications distributed over said one or more computer systems (Figures 1-4 and Col. 3 lines 19-25 & Col. 4 line 65-Col. 5 line 7; reads on this limitation).
5. The tunneling system of claim 4 wherein a client part includes an indirect connection to a server application (Figures 1-4 and Col. 3 lines 19-25; reads on this limitation).

6. The tunneling system of claim 1 wherein said TCP service is published to said server by said service proxy (Figures 1-4 and Abstract & Col. 1 lines 4-9 & Col. 3 lines 19-25; reads on this limitation).
7. The tunneling system of claim 6 wherein said service proxy sends publish information to said server after creating a connection to said server (Figures 1-4 and Abstract & Col. 1 lines 4-9 & Col. 3 lines 19-25; reads on this limitation).
8. The tunneling system of claim 7 wherein said service proxy saves a service key returned by said server (Figures 1-4 and Abstract & Col. 3 lines 13-18 & lines 27-34; reads on this limitation).
9. The tunneling system of claim 8 wherein said service proxy creates a mapping entry responsive to said service key (Figures 1-4 and Col. 3 lines 52- Col. 4 line 4; reads on this limitation).
10. The tunneling system of claim 6 wherein said server creates a pseudo DNS name for said service (Figures 1-4 and Col. 8 line 58- Col. 9 line 10; reads on this limitation).
11. The tunneling system of claim 6 wherein said server creates a service key responsive to said publish information (Figures 1-4 and Col. 8 lines 13-23; reads on this limitation).
12. The tunneling system of claim 9 wherein said server creates a pseudo DNS name for said service (Figures 1-4 and Col. 8 line 58- Col. 9 line 10; reads on this limitation).

13. The tunneling system of claim 9 wherein said server creates a service key responsive to said publish information (Figures 1-4 and Col. 3 lines 52- Col. 4 line 4; reads on this limitation).

14. The tunneling system of claim 12 wherein said server creates a service key responsive to said publish information (Figures 1-4 and Col. 3 lines 52- Col. 4 line 4; reads on this limitation).

15. The tunneling system of claim 1 wherein one of said computer systems includes a client application, and wherein said client application includes a TCP socket hooking service to selectively respond to TCP service calls (Figures 1-4 and Abstract and Col. 3 lines 19-25; reads on this limitation).

16. The tunneling system of claim 15 wherein said hooking service is responsive to a connect() call to selectively redirect said call based upon a content of said connect() call (Figures 1-4 and Abstract & Col. 6 lines 10-24 & line 61- Col. 7 line 11; reads on this limitation).

17. The tunneling system of claim 10 wherein one of said computer systems includes a client application, and wherein said client application includes a TCP socket hooking service to selectively respond to TCP service calls (Figures 1-4 and Abstract and Col. 3 lines 19-25; reads on this limitation).

18. The tunneling system of claim 17 wherein said hooking service is responsive to a connect() call to selectively redirect said call based upon

a content of said connect() call (Figures 1-4 and Abstract & Col. 6 lines 10-24 & line 61- Col. 7 line 11; reads on this limitation).

19. The tunneling system of claim 18 wherein said content of said connect() call includes said pseudo DNS name (Figures 1-4 and Col. 6 lines 10-24; reads on this limitation).

20. The tunneling system of claim 19 wherein said one client application includes a redirector process (Figures 1-4 and Abstract & Col. 6 lines 10-24 & line 61- Col. 7 line 11; reads on this limitation).

21. The tunneling system of claim 10 wherein said pseudo DNS is resolved at a client side (Figures 1-4 and Col. 8 line 58- Col. 9 line 10; reads on this limitation).

22. A method for tunneling a TCP service, the method comprising: a) connecting a service proxy to a service publishing/tunneling server, wherein said server is coupled to a wide-area network and said service proxy is coupled to one or more computer systems for implementing one or more service proxy functions (Figure 1-4 and Abstract & Col. 1 lines 4-9; reads on this limitation); b) sending, from said proxy, publishing information for a particular service to said server (Figures 1-4 and Abstract & Col. 1 lines 4-9 & Col. 3 lines 19-25; reads on this limitation); c) receiving a service key for said particular service from said server (Figures 1-4 and Abstract & Col. 3 lines 13-18 & lines 27-34; reads on this limitation); and d) using said service key to provide said particular service

to said one or more client computer systems from said server through said service proxy (Figures 1-4 and Abstract & Col. 3 lines 13-18 & lines 27-34; reads on this limitation).

23. The method of claim 22 further comprising: e) creating a mapping entry on said service proxy responsive to said service key and to said publishing information (Figures 1-4 and Col. 3 lines 52- Col. 4 line 4; reads on this limitation).

24. The method of claim 23 wherein said mapping entry includes a pseudo DNS name (Figures 1-4 and Col. 8 line 58- Col. 9 line 10; reads on this limitation).

25. The method of claim 24 wherein said pseudo DNS name was generated by said server responsive to said publishing information (Figures 1-4 and Col. 8 line 58- Col. 9 line 10; reads on this limitation).

26. The method of claim 24 wherein said DNS name is resolved on a client side (Figures 1-4 and Col. 8 line 58- Col. 9 line 10; reads on this limitation).

27. The method of claim 26 wherein said DNS name is resolved without accessing an external DNS service outside the service proxy (Figures 1-4 and Col. 8 line 58- Col. 9 line 10; reads on this limitation).

28. The method of claim 22 further comprising: e) redirecting a TCP connect call from a client application to a server peer via a connection chain using a redirector process (Figures 1-4 and Abstract & Col. 3 line

66- Col. 4 line 4 & Col. 6 lines 10-24 & line 61- Col. 7 line 11; reads on this limitation).

29. The method of claim 28 wherein said step of redirecting e) is responsive to said pseudo DNS name and said service key (Figures 1-4 and Abstract & Col. 3 line 66- Col. 4 line 4 & Col. 6 lines 10-24 & line 61- Col. 7 line 11; reads on this limitation).

30. The method of claim 28 wherein said connection chain is a virtual TCP connection that functions as a real TCP connection (Figures 1-4 and Abstract and Col. 3 lines 19-25; reads on this limitation).

31. The method of claim 30 wherein said chain connection couples, in sequence, said client application to said redirector process to said publishing/tunneling server to said service proxy to said server peer (Figures 1-4 and Abstract & Col. 3 line 66- Col. 4 line 4 & Col. 6 lines 10-24 & line 61- Col. 7 line 11; reads on this limitation).

32. The method of claim 31 wherein said virtual TCP connection is a two-way connection between said client application and said server peer wherein data transfer may occur in both directions (Figures 1-4 and Abstract & Col. 3 line 66- Col. 4 line 4 & Col. 6 lines 10-24 & line 61- Col. 7 line 11; reads on this limitation).

33. A method for tunneling a TCP service, the method comprising: a) connecting a service proxy to a service publishing/tunneling server, wherein said server is coupled to a wide-area network and said service

proxy is coupled to one or more computer systems for implementing one or more service proxy functions (Figures 1-4 and Abstract & Col. 1 lines 4-9 & Col. 5 lines 38-57; reads on this limitation); b) receiving, from said proxy, publishing information for a particular service at said server (Figures 1-4 and Abstract & Col. 1 lines 4-9 & Col. 3 lines 19-25; reads on this limitation); and c) transmitting a service key for said particular service from said server; wherein said service key is used to provide said particular service to said one or more client computer systems from said server through said service proxy (Figures 1-4 and Abstract & Col. 3 lines 13-18 & lines 27-34 & Col. 8 lines 13-23; reads on this limitation).

34. An apparatus for tunneling, comprising: means for connecting a service proxy to a service publishing/tunneling server, wherein said server is coupled to a wide-area network and said service proxy is coupled to one or more computer systems for implementing one or more service proxy functions (Figures 1-4 and Abstract & Col. 1 lines 4-9 & Col. 5 lines 38-57; reads on this limitation); means for sending, from said proxy, publishing information for a particular service to said server; means for receiving a service key for said particular service from said server (Figures 1-4 and Abstract & Col. 3 lines 13-18 & lines 27-34 & Col. 8 lines 13-23; reads on this limitation); and means for using said service key to provide said particular service to said one or more client computer systems from said

server through said service proxy (Figures 1-4 and Abstract & Col. 3 lines 13-18 & lines 27-34 & Col. 8 lines 13-23; reads on this limitation).

35. An apparatus for tunneling, comprising: means for connecting a service proxy to a service publishing/tunneling server, wherein said server is coupled to a wide-area network and said service proxy is coupled to one or more computer systems for implementing one or more service proxy functions (Figures 1-4 and Abstract & Col. 1 lines 4-9 & Col. 5 lines 38-57; reads on this limitation); means for receiving, from said proxy, publishing information for a particular service at said server (Figures 1-4 and Abstract & Col. 1 lines 4-9 & Col. 3 lines 19-25; reads on this limitation); and means for transmitting a service key for said particular service from said server; wherein said service key is used to provide said particular service to said one or more client computer systems from said server through said service proxy (Figures 1-4 and Abstract & Col. 3 lines 13-18 & lines 27-34 & Col. 8 lines 13-23; reads on this limitation).

36. A computer program product comprising a computer readable medium carrying program instructions for tunneling TCP services when executed using two or more computing systems each coupled to a global area network, the executed program instructions executing a method, the method comprising: a) connecting a service proxy to a service publishing/tunneling server, wherein said server is coupled to a wide-area network and said service proxy is coupled to one or more computer

systems for implementing one or more service proxy functions (Figures 1-4 and Abstract & Col. 1 lines 4-9 & Col. 5 lines 38-57; reads on this limitation); b) sending, from said proxy, publishing information for a particular service to said server (Figures 1-4 and Abstract & Col. 3 lines 13-18 & lines 27-34 & Col. 8 lines 13-23; reads on this limitation); c) receiving a service key for said particular service from said server (Figures 1-4 and Abstract & Col. 3 lines 13-18 & lines 27-34 & Col. 8 lines 13-23; reads on this limitation); and d) using said service key to provide said particular service to said one or more client computer systems from said server through said service proxy (Figures 1-4 and Abstract & Col. 3 lines 13-18 & lines 27-34 & Col. 8 lines 13-23; reads on this limitation).

37. The computer program product of claim 36 further comprising: e) creating a mapping entry on said service proxy responsive to said service key and to said publishing information (Figures 1-4 and Col. 3 lines 52-Col. 4 line 4; reads on this limitation).

38. The computer program product of claim 37 wherein said mapping entry includes a pseudo DNS name (Figures 1-4 and Col. 8 line 58- Col. 9 line 10; reads on this limitation).

39. The computer program product of claim 38 wherein said pseudo DNS name was generated by said server responsive to said publishing information (Figures 1-4 and Col. 8 lines 13-23; reads on this limitation).

40. The computer program product of claim 38 wherein said DNS name is resolved on a client side (Figures 1-4 and Col. 8 line 58- Col. 9 line 10; reads on this limitation).

41. The computer program product of claim 40 wherein said DNS name is resolved without accessing an external DNS service (Figures 1-4 and Col. 8 line 58- Col. 9 line 10; reads on this limitation).

42. A computer program product comprising a computer readable medium carrying program instructions for tunneling TCP services when executed using two or more computing systems each coupled to a global area network, the executed program instructions executing a method, the method comprising: a) connecting a service proxy to a service publishing/tunneling server, wherein said server is coupled to a wide-area network and said service proxy is coupled to one or more computer systems for implementing one or more service proxy functions (Figures 1-4 and Abstract & Col. 1 lines 4-9 & Col. 5 lines 38-57; reads on this limitation); b) receiving, from said proxy, publishing information for a particular service at said server (Figures 1-4 and Abstract & Col. 3 lines 13-18 & lines 27-34 & Col. 8 lines 13-23; reads on this limitation); and c) transmitting a service key for said particular service from said server; wherein said service key is used to provide said particular service to said one or more client computer systems from said server through said

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service proxy (Figures 1-4 and Abstract & Col. 3 lines 13-18 & lines 27-34 & Col. 8 lines 13-23; reads on this limitation).

Examiner Note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in its entirety as potentially teaching of all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner

Conclusion

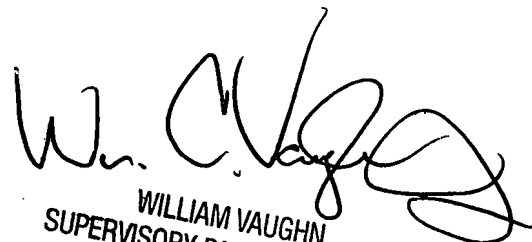
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maceeh Anwari whose telephone number is 571-272-7591. The examiner can normally be reached on Monday-Friday 7:30-5:00 PM ES.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Vaughn can be reached on 571-272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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